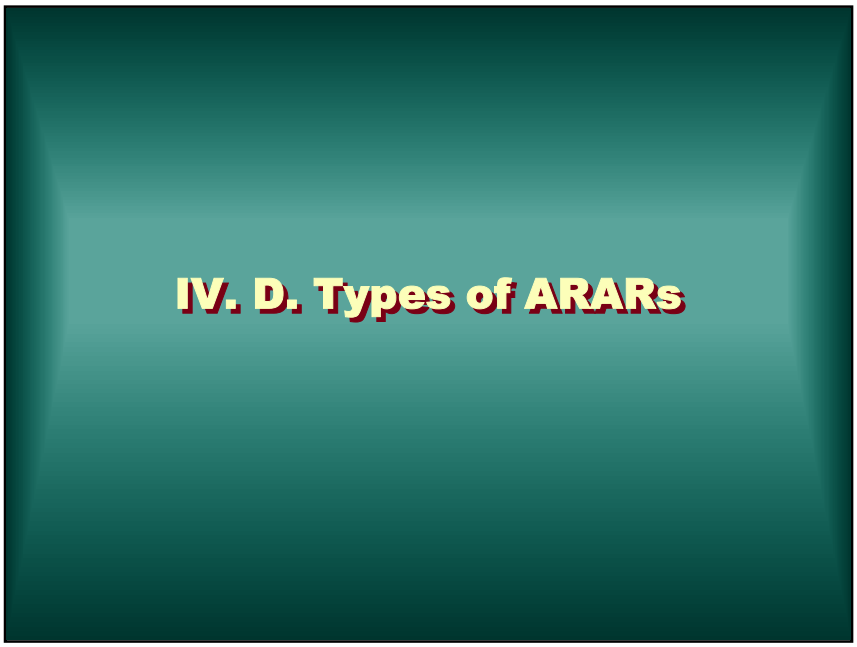
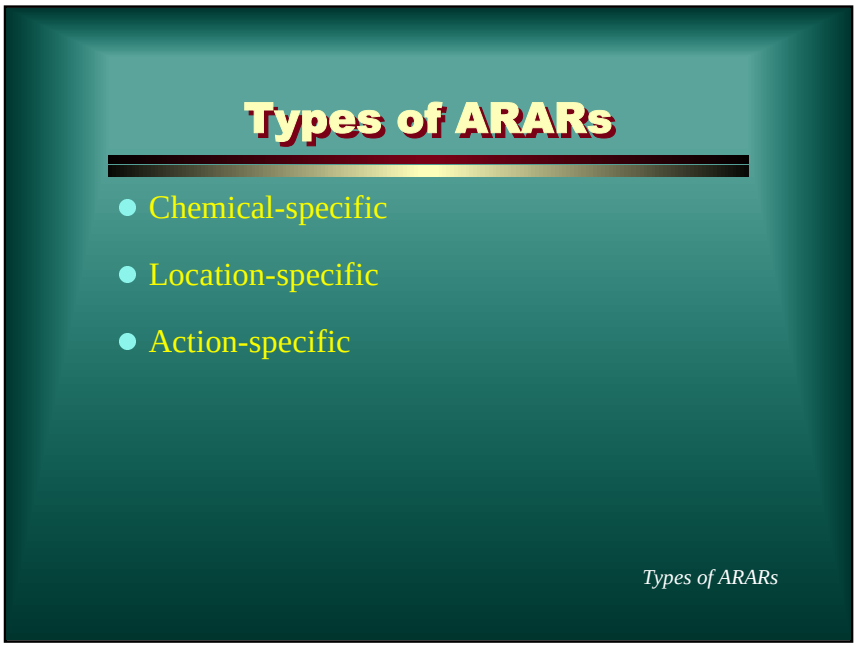


Notes:



Notes:

Generally ARARs fall into one of these categories. Certain ARARs may fit into more than one category, and are sometimes called "hybrid" ARARs. For example, effluent discharge limits under the CWA NPDES program are chemical-specific numeric limits but are triggered by taking an action, a point source discharge into waters of the U.S., and will depend on the type of point source discharging the effluent and the body of water into which the effluent is discharged.

The next three slides will discuss the three different types of ARARs.

Notes:

Chemical-specific ARARs may be expressed as a numerical concentration limit, an emission or effluent discharge limit, or as a methodology for establishing such limits.

As a general rule, if more than one chemical-specific ARAR exists for a certain contaminant, the most stringent ARAR should be used. If chemical-specific ARARs are not available for a certain contaminant, TBCs should be consulted.

Chemical-specific requirements are usually set for a specific chemical and typically do not consider the synergistic effect of mixtures of chemicals that may be found at Superfund sites. Due to site-specfic factors, cleanup goals set at single chemical-specific requirements may not adequately protect human health or the environment. In these instances, cleanup goals would need to be set **below** the chemical-specific requirements (i.e., at more stringent levels) in order to be protective.

Chemical-specific ARARs are usually derived from the following:

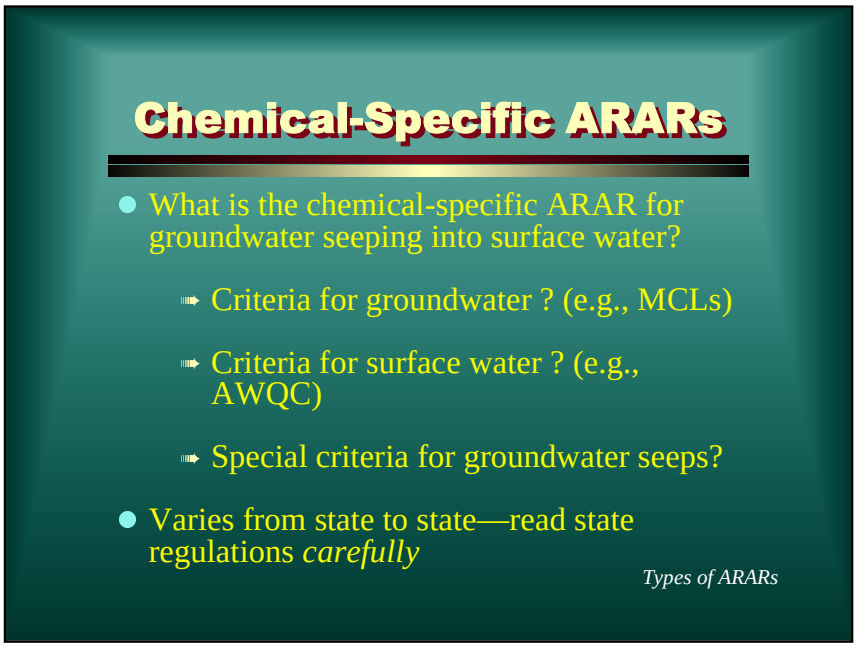
- Resource Conservation and Recovery Act (RCRA)
- Safe Drinking Water Act (SDWA)
- Clean Water Act (CWA)
- Clean Air Act (CAA)
- State regulations

Examples of chemical-specific ARARs:

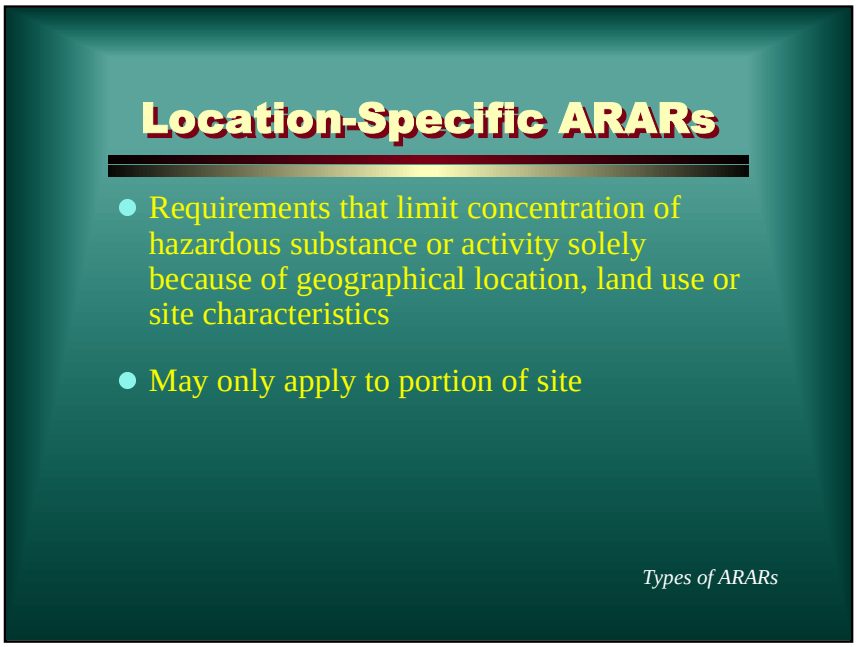
- RCRA Groundwater Protection Standards (MCLs or ACLs)
- SDWA Maximum Contaminant Levels (MCLs)
- CWA Federal or State Water Quality Criteria

Notes:

This is a picture from the ORNL WAG 5 Seep D non-time critical removal action. The white arrow on the picture is pointing to the spot, marked by a pole, were Sr^{90}-contaminated groundwater is seeping out to the ground within the Mitchell Branch streambed. The stream was temporarily rerouted while a groundwater collection and treatment system was installed to collect and treat the seep water and discharge it back into the stream. The water coming up at the seep is groundwater, but it flows into a surface water stream classified for recreation and protection of fish and aquatic life but not for drinking water. Depending on how a particular state defines and classifies their water, this seep might be considered either groundwater or surface water, and potentially very different chemical-specific ARARs could apply for cleanup of this seep.


Chemical-Specific ARARs
What is the chemical-specific ARAR for groundwater seeping into surface water?
Criteria for groundwater ? (e.g., MCLs)
Criteria for surface water ? (e.g., AWQC)
Special criteria for groundwater seeps?
Varies from state to state—read state regulations carefully
Types of ARARs

Notes:



Notes:

Location-specific ARARs are usually derived from the following:

- Archaeological and Historic Preservation Act (AHPA)
- Archaeological Resource Protection Act (ARPA)
- Executive Orders 11988/11990 - Protection of Floodplains/Wetlands
- RCRA
- CWA
- DOE 10 CFR 1022 Compliance with Floodplains/Wetlands Regulations
- Endangered Species Act (ESA)
- Fish and Wildlife Coordination Act (FWCA)
- National Historic Preservation Act (NHPA)
- State regulations

Examples of location-specific ARARs:

- RCRA prohibition of siting new TSD facilities in areas of faults displaced in the Holocene time [40 CFR 264.18(a)]
- CWA prohibition of degradation of aquatic ecosystems or destruction of wetlands due to discharge of dredge or fill material (40 CFR 230)
- ESA prohibition of actions that jeopardize endangered species/habitat (50 CFR 402)

Notes:

The stream had to be temporarily rerouted around the seep in the previous picture to allow the installation of the groundwater collection/treatment system. Before that could be done, the fish within the segment of stream scheduled for rerouting had to be collected and moved farther downstream in order to comply with an ARAR.


Location-Specific ARARs
Fish & Wildlife Coordination Act (16 USC 661 et seq.)
The effects of water-related projects on fish and wildlife resources must be considered. Action must be taken to prevent, mitigate, or compensate for project-related damages or losses to fish and wildlife resources.
Types of ARARs

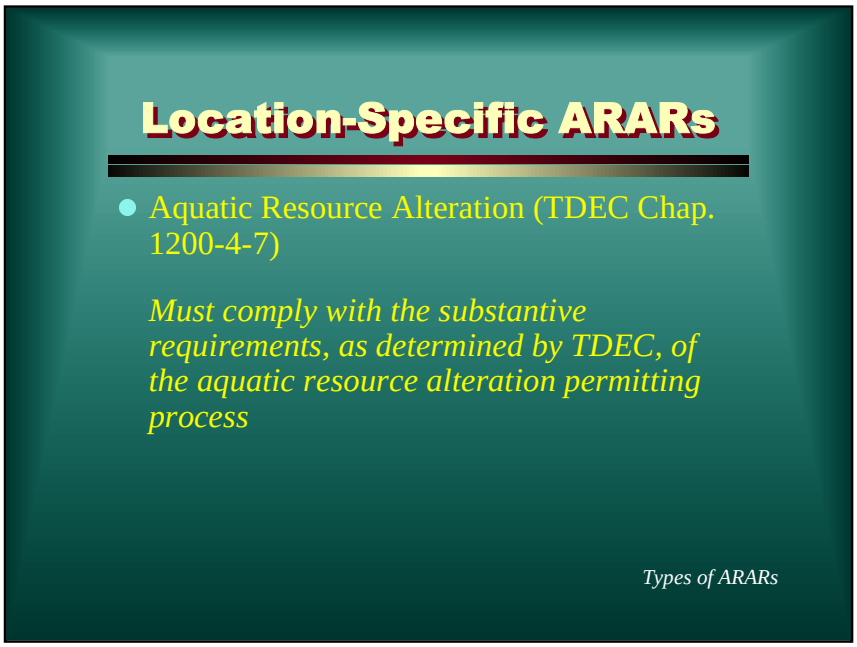
Notes:

Notes:

A sump was placed in the bed of the stream at the point where the groundwater seeped to the surface.

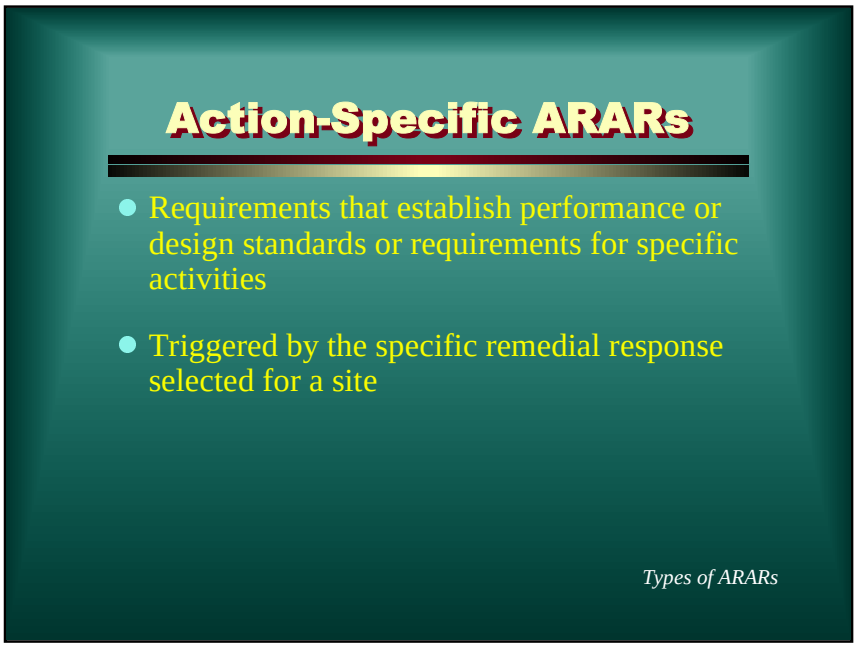
Notes:

Another shot, farther along, of the installation of the sump within the streambed. Altering the stream and working within the streambed of waters of the State of Tennessee triggered another set of location-specific ARARs.



Notes:

Tennessee's Aquatic Resource Alteration regulations require permits for any alteration of waters of the State. Tennessee has authorized certain general permits for alterations that cause minimal impacts to water quality (e.g., minor road crossings, bank stabilization, sand and gravel dredging), but the state requires individual permits for actions which don't qualify for a general permit. The substantive requirements the State set as part of that permit process were listed as location-specific ARARs for this removal action, although they could also have been listed as action-specific ARARs, since they were triggered by the action of installing the groundwater sump within the streambed. As discussed later, the administrative requirement to actually obtain the individual permit was not ARAR.



Notes:

In order to identify action-ARARs, first identify all all the remedial alternatives being considered for a specific site, then determine the scenario for each alternative, including preconstruction activities, excavation/removal of soil/waste, treatment options, impact on adjacent water bodies, disposal of treated media and/or residuals, closure options.

Action-specific ARARs are usually derived from the following:

- RCRA
- CWA
- CAA
- Toxic Substances Control Act (TSCA)
- State regulations

Examples of action-specific ARARs:

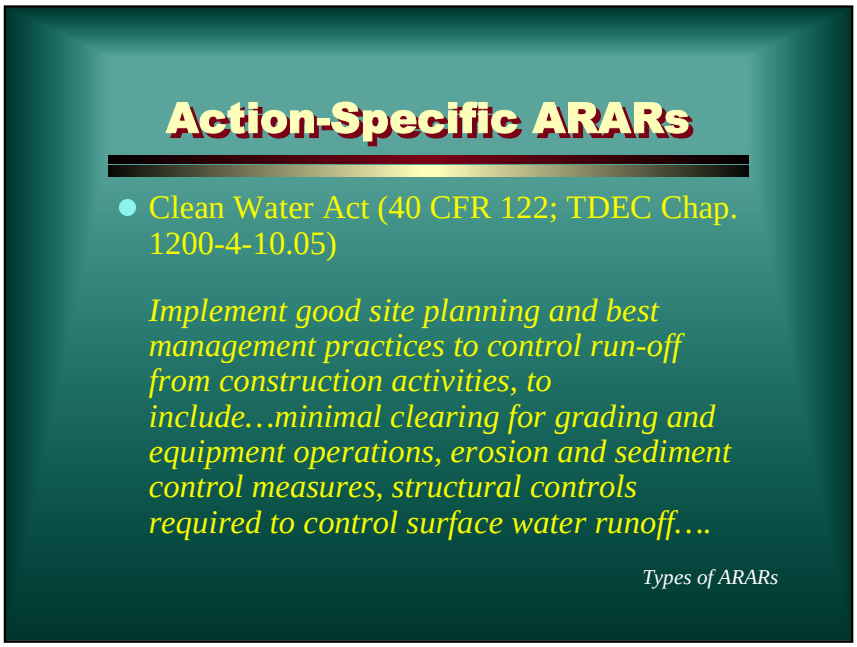
- CWA pretreatment regulations
- RCRA closure requirements and Land Disposal Restrictions
- CAA standards for control of emissions of volatile organics or radionuclides
- TSCA storage and disposal requirements for PCBs
- EPA standards for the management, storage, and disposal of high-level and transuranic wastes

Notes:

Hay bales were laid along the edges of the stream to prevent storm water runoff into the streambed during installation and operation activities.

Notes:

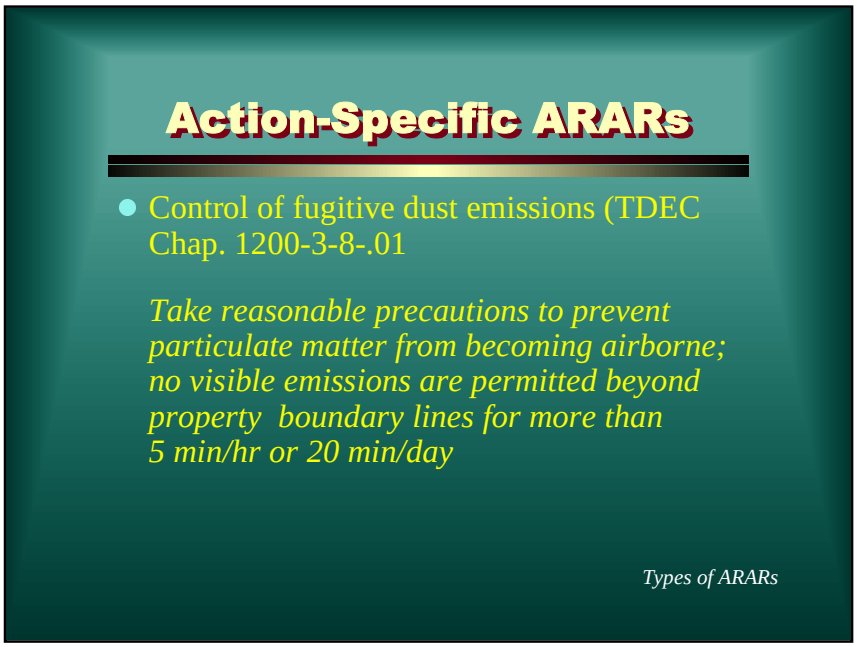
A “best management plan” was developed and implemented to handle storm water runoff during the installation of the sump and operation of the collection and treatment system.



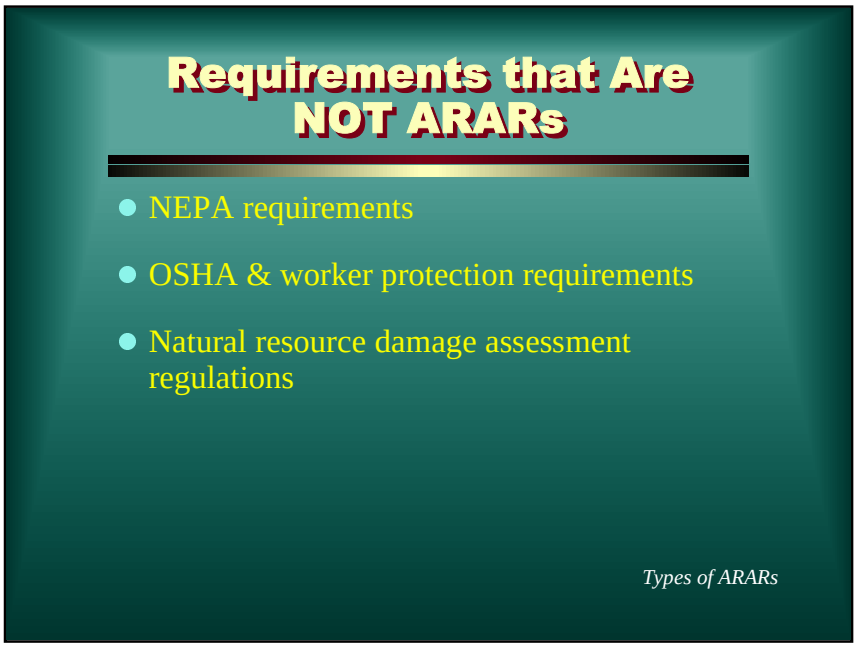
Notes:

These requirements were action-specific ARARs triggered by initiation of the sump installation and treatment operation actions.

Notes:


Action-Specific ARARs
Control of fugitive dust emissions (TDEC Chap. 1200-3-8-.01
Take reasonable precautions to prevent particulate matter from becoming airborne; no visible emissions are permitted beyond property boundary lines for more than 5 min/hr or 20 min/day
Types of ARARs

Notes:



Notes:

EPA has affirmed that ARARs are requirements that protect human health and the environment and, as such, they do not include occupational safety or worker protection requirements. EPA requires compliance with the OSHA standards and other worker protection requirements in 40 CFR 300.150 of the National Contingency Plan, not through the ARARs process (55 *FR* 8679, March 8, 1990).

The National Environmental Policy Act (NEPA) regulations delineate an administrative process to be followed to evaluate the effects of a proposed activity on sensitive environmental resources. As such, it is an administrative and procedural requirement and, therefore, not ARAR. Any regulations designed to protect any sensitive resources identified through this NEPA process, however, would be considered potential ARARs.

The Natural Resource Damage Assessment (NRDA) regulations address any damages to sensitive natural resources and provide for economic compensation to designated natural resource trustees for such residual damages. Like the NEPA regulations, the NRDA regulations establish an administrative process for assessing damages but do not add any additional substantive standards.

OSHA & worker protection requirements are not ARARs!

Notes:

OSHA & worker protection requirements are not ARARs!

Notes: